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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,712	06/27/2003	Roy A. Gravel	50004/002005	5124

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EXAMINER	
FALK, ANNE MARIE	
ART UNIT	**PAPER NUMBER**
1632	

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,712	GRAVEL ET AL.	
	Examiner	Art Unit	
	Anne-Marie Falk, Ph.D.	1632	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/7/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-10 are pending in the instant application.

The amendment to the specification, filed June 27, 2003, has been entered.

The remarks filed June 27, 2003 are addressed herein.

Priority

This application claims priority to application serial no. 08/980,326, filed 11/26/97, provisional application serial no. 60/050,310, filed 6/20/97, and provisional application serial no. 60/031,964. However, the priority applications fail to provide adequate support under 35 U.S.C. 112, for Claims 1-10 of this application, for the reasons discussed below in the rejection under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement. Thus, the effective filing date for Claims 1-10 as instantly presented is 6/27/03.

As a further issue, neither the instant specification nor any of the priority applications contemplate a nucleic acid sequence "wherein at least 18 contiguous nucleotides of said sequence are complementary to at least 90% of the corresponding nucleotides of the nucleic acid encoding the methionine synthase polypeptide" as recited in Claim 5. Additionally, neither the instant specification nor any of the priority applications contemplate a nucleic acid "wherein the sequence of said nucleic acid is at least 35% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 8. Thus, there is no support for these limitations in the prior-filed applications. Therefore, the effective filing date for claims reciting these limitations is 6/27/03.

Drawings

The drawings are objected to because the background of Figure 4 is too dark and nothing is visible. Correction is required.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because of the above-noted deficiency. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

The informal drawings are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as "amended." If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor's name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 9 and 10 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 6 and 5, respectively, of U.S. Patent No. 6,703,197. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the instant application read on the kit and nucleic acid as claimed in Claims 5 and 6 of the patent.

Although Claim 9 of the instant application recites that the nucleic acid probe is useful for detecting a mutation selected from the group consisting of D919G, H920D, and dIle881 and Claim 6 of

the patent requires detection of all three mutations, detection of a single one of the recited mutations is anticipated by detection of all three mutations.

Claim 10 of the instant application is directed to a kit comprising a nucleic acid probe, wherein the probe comprises "at least 40 nucleotides that hybridizes at high stringency to a sequence found within the nucleic acid of SEQ ID NO: 1." Thus, Claim 10 is anticipated by the nucleic acid of Claim 5 of the patent.

Claim Objections

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 6 is directed to the nucleic acid of Claim 1, "wherein said high stringency conditions comprise hybridization in 2X SSC at 40°C." Claim 1 already recites "high stringency conditions" and the specification defines "high stringency conditions" as meaning hybridization in 2X SSC at 40°C with a DNA probe length of at least 40 nucleotides (see page 10, lines 22-23 of the specification). Thus, the recitation of "high stringency conditions" in Claim 1 inherently requires hybridization in 2X SSC at 40°C. Accordingly, Claim 6 fails to further limit the subject matter of Claim 1.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Written Description

Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not disclose a single human nucleic acid that is 35%, 50%, 75%, or 90% identical to a region of SEQ ID NO: 1, as claimed. In particular, the specification does not disclose a single human nucleic acid that is 35%, 50%, 75%, or 90% identical to the full-length of SEQ ID NO: 1. Nevertheless, the claims cover such nucleic acids.

Furthermore, as discussed below, it is unclear how a nucleic acid that is only 35% identical to the entire length of SEQ ID NO: 1 can be considered a "human nucleic acid." Although the preamble of the claim refers to a "human nucleic acid", the body of the claim does not include any limitations that denote that the nucleic acid must be one that is naturally-occurring in a human cell. On the contrary, the claims clearly cover synthetic nucleic acids that would never be found in a human cell, particularly probes that target various methionine synthase genes. Furthermore, the probes that target various methionine synthase genes can target any methionine synthase gene from any species and any mutant form of any methionine synthase gene. The *E. coli* methionine synthase gene is approximately 35% identical to SEQ ID NO: 1. Thus, by Applicants' definition, the *E. coli* methionine synthase gene is a human nucleic acid based on its identity to SEQ ID NO: 1 and based on its ability to hybridize to SEQ ID NO: 1.

The Guidelines for Written Description state that "when there is substantial variation within the genus, one must describe a sufficient variety of species to reflect the variation within the genus" (MPEP §2163(3)(a)(ii)). "The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species, by actual reduction to practice ..., reduction to drawings ..., or by disclosure of relevant identifying characteristics, i.e., structure or other physical

and/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus" (MPEP §2163(3)(a)(ii)). The Guidelines go on to say that "[f]or inventions in an unpredictable art, adequate written description of a genus which embraces widely variant species *cannot* be achieved by disclosing only one species within the genus" (Federal Register, Vol. 66, No. 4, page 1106, column 3, paragraph 4).

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481 at 1483. In *Fiddes*, claims directed to mammalian FGFs were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

A gene is a chemical compound, albeit a complex one, and it is well-established in our law that conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials, and to describe how to obtain it. See *Oka* 849 F.2d at 583, 7 USPQ2d at 1171. Conception does not occur unless one has a mental picture of the structure of the chemical compound, or is able to define it by its method of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it. It is not sufficient to define it solely by its principal biological property, e.g. encoding human methionine synthase, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property. We hold that when an inventor is unable to envision the detailed constitution of a gene so as to distinguish it from other materials, as well as a method for obtaining it, conception has not been achieved until reduction to practice has occurred, i.e. until after the gene has been isolated. *Amgen Inc. v. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016, 1021 (Fed. Cir. 1991).

The claims encompass a nucleic acid encoding <u>any</u> mammalian methionine synthase polypeptide. The specification only disloses the cDNA sequence for the <u>human</u> methionine synthase gene. The specification does not describe other methionine synthase-encoding nucleic acids, either cDNA or

genomic DNA, from any other mammals nor the nucleotide sequence of these molecules. Furthermore, the specification does not disclose or point to a disclosure of any methionine synthase amino acid sequence from any mammal other than humans. The specification is drawn exclusively to the human methionine synthase cDNA sequence, deduced amino acid sequence, and specific mutations therein. In analyzing whether the written description requirement is met for genus claims, it is first determined whether a representative number of species have been described by their complete structure. In this case, the cDNA sequence encoding the wild-type form of human methionine synthase is the only species whose complete structure is disclosed. Next, then, it is determined whether a representative number of species have been sufficiently described by other relevant identifying characteristics. In this case, no other sequences have been described by any other relvant identifying characteristics. This limited information is not deemed sufficient to reasonably convey to one skilled in the art that Applicants were in possession of the genus of any mammalian methionine synthase-related nucleic acid. Thus it is concluded that the written description requirement is not satisfied for the claimed genus of nucleic acids.

At pages 2-3 of the remarks filed June 27, 2003, Applicants assert that the claims have been amended to recite a "human" nucleic acid and therefore do not cover nucleic acids that encode methionine synthase from other mammalian species. This argument is not found persuasive because the body of the claims are in no way limited to nucleic acids that would encode the **human** methionine synthase. On the contrary, the claims recite limitations such as "wherein the sequence of said nucleic acid is at least 35% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1." As claimed, a "region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" covers the entire full-length nucleic acid of SEQ ID NO: 1. The gene encoding E. coli methionine synthase is at least 35% identical to SEQ ID NO: 1. Thus, it is clear that the claims continue to cover nucleic acids that encode methionine synthase from other species. Furthermore, the claims cover a huge

variety of mutant forms of the human methionine synthase gene, when the specification only describes the wild-type sequence and 3 mutations.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-8 are indefinite in their recitation of a "human nucleic acid" because the usage and meaning of the term is unclear. The specification does not define the term "human nucleic acid." Thus, the metes and bounds are not clearly set forth. The phrase "human nucleic acid" is used in combination with a variety of limitations that do not specifically define a nucleic acid that would be found naturally-occurring in a human cell. Thus, it appears that the phrase can refer to any nucleic acid, regardless of its origin, that can base pair to a region of SEQ ID NO: 1.

Claim 2 is indefinite in its recitation of "the nucleic acid encoding the methionine synthase polypeptide" because the phrase lacks antecedent basis. Although SEQ ID NO: 1 encodes **a** methionine synthase polypeptide, the claim reads on other nucleic acids that encode other methionine synthase polypeptides, including a wide variety of mutant forms. Claim 5 is indefinite insofar as it depends from Claim 2.

Claim 2 is indefinite in its recitation of "said sequence" in line 1 of the claim, because "said sequence" clearly must refer back to "a sequence found within the nucleic acid of SEQ ID NO: 1" but it is unclear how "a sequence found within the nucleic acid of SEQ ID NO: 1" can have a sequence "complementary to at least 50% of at least 60 contiguous nucleotides of the nucleic acid encoding the methionine synthase polypeptide" especially if "the nucleic acid encoding the methionine synthase

polypeptide" **is** SEQ ID NO: 1. In other words, how can a sequence within SEQ ID NO: 1 be complementary to a sequence within SEQ ID NO: 1?

Claim 2 is indefinite in its recitation of "said sequence" in line 3 of the claim because the term has ambiguous antecedent basis. The claim refers to multiple distinct sequences, particularly a sequence that "has a sequence" in line 1 of Claim 2. Claim 5 is indefinite insofar as it depends from Claim 2.

Claim 3 is indefinite in its recitation of "said nucleic acid" because the term has ambiguous antecedent basis. Claim 1 refers to multiple distinct nucleic acids, namely the claimed nucleic acid and the "nucleic acid of SEQ ID NO: 1." Claim 4 is indefinite insofar as it depends from Claim 3.

Claim 3 is indefinite in its recitation of "said nucleic acid probe" because the phrase lacks antecedent basis. Claim 4 is indefinite insofar as it depends from Claim 3.

Claim 4 is indefinite in its recitation of "said sequence of said nucleic acid" because it is unclear which sequence is being referred to.

Claim 4 is indefinite in its recitation of "said nucleic acid" because the term has ambiguous antecedent basis. Claim 1 refers to multiple distinct nucleic acids, namely the claimed nucleic acid and the "nucleic acid of SEQ ID NO: 1."

Claim 5 is indefinite in its recitation of "said sequence" because the term has ambiguous antecedent basis. The claim refers to multiple distinct sequences, particularly a sequence that "has a sequence" in line 1 of Claim 2 and "a sequence found within the nucleic acid of SEQ ID NO: 1."

Claim 5 is indefinite in its recitation of "the nucleic acid encoding the methionine synthase polypeptide" because the phrase lacks antecedent basis. Although SEQ ID NO: 1 encodes **a** methionine synthase polypeptide, the claim reads on other nucleic acids that encode other methionine synthase polypeptides, including a wide variety of mutant forms.

Claim 5 is indefinite in its recitation of "the corresponding nucleotides" because the phrase lacks antecedent basis. Use of the definite article "the" denotes particular "corresponding nucleotides" but the claim does not define any particular corresponding nucleotides.

Claim 5 is indefinite in its recitation of "corresponding" because it is unclear how nucleotides of one nucleic acid "correspond" to nucleotides of another nucleic acid.

Claim 7 is indefinite in its recitation of "the corresponding region" because the phrase lacks antecedent basis. Use of the definite article "the" denotes a particular "corresponding region" but the claim does not define any particular corresponding region.

Claim 7 is indefinite in its recitation of "corresponding" because it is unclear how a sequence of one nucleic acid "corresponds" to a region of another nucleic acid.

Claim 8 is indefinite in its recitation of "the corresponding region" because the phrase lacks antecedent basis. Use of the definite article "the" denotes a particular "corresponding region" but the claim does not define any particular corresponding region.

Claim 8 is indefinite in its recitation of "corresponding" because it is unclear how a sequence of one nucleic acid "corresponds" to a region of another nucleic acid.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

In the absence of a specific definition set forth in the specification of an application, claim terminology is given its broadest reasonable interpretation consistent with the teachings of the

specification. Given its broadest reasonable interpretation, a "human nucleic acid" as instantly claimed is interpreted to mean any nucleic acid, regardless of its origin, that can base pair with a nucleic acid isolated from a human cell. Thus, the nucleic acid can be a nucleic acid isolated from any organism, a fragment of a nucleic acid isolated from any organism, and can also be a synthetic nucleic acid, such as a cDNA molecule, probe, or primer.

Claims 1, 2, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by GenBank Accession No. HSU75743 (Li et al., 1/2/97).

GenBank Accession No. HSU75743 discloses the sequence of human methionine synthase cDNA. Thus, the reference discloses a substantially pure human nucleic acid comprising at least 40 nucleotides that hybridizes under high stringency to a sequence found within the nucleic acid of SEQ ID NO: 1, as recited in Claim 1. The disclosed sequence meets the limitation "wherein said sequence has a sequence complementary to at least 50% of at least 60 contiguous nucleotides of the nucleic acid encoding methionine synthase, said sequence sufficient to allow nucleic acid hybridization under high stringency conditions," as recited in Claim 2. The disclosed cDNA meets the limitation "wherein at least 18 contiguous nucleotides of said sequence are complementary to at least 90% of the corresponding nucleotides of the nucleic acid encoding the methionine synthase polypeptide," as recited in Claim 5. The sequence of the disclosed cDNA "is at least 75% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 7. Likewise, the sequence of the disclosed cDNA is therefore "at least 35% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 8.

Thus, the claimed invention is disclosed in the prior art.

Claims 1, 2, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by GenBank Accession No. J04975 (Banerjee et al., 10/20/93).

GenBank Accession No. J04975 discloses the sequence of the *E. coli* methionine synthase gene. Given the broadest reasonable interpretation of the claims, as set forth above, the reference discloses a substantially pure human nucleic acid comprising at least 40 nucleotides that hybridizes under high stringency to a sequence found within the nucleic acid of SEQ ID NO: 1, as recited in Claim 1. The disclosed sequence meets the limitation "wherein said sequence has a sequence complementary to at least 50% of at least 60 contiguous nucleotides of the nucleic acid encoding methionine synthase, said sequence sufficient to allow nucleic acid hybridization under high stringency conditions," as recited in Claim 2. The disclosed cDNA meets the limitation "wherein at least 18 contiguous nucleotides of said sequence are complementary to at least 90% of the corresponding nucleotides of the nucleic acid encoding the methionine synthase polypeptide," as recited in Claim 5. The sequence of the disclosed cDNA "is at least 75% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 7. Likewise, the sequence of the disclosed cDNA is therefore "at least 35% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 8.

Thus, the claimed invention is disclosed in the prior art.

Claims 1, 2, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by GenBank Accession No. W33307 (Marra et al., 5/13/96).

GenBank Accession No. W33307 discloses a nucleic acid sequence from the mouse methionine synthase gene. The disclosed sequence will base pair with the nucleic acid of SEQ ID NO: 1 Thus, the reference discloses a substantially pure human nucleic acid comprising at least 40 nucleotides that hybridizes under high stringency to a sequence found within the nucleic acid of SEQ ID NO: 1, as recited in Claim 1. The disclosed sequence meets the limitation "wherein said sequence has a sequence complementary to at least 50% of at least 60 contiguous nucleotides of the nucleic acid encoding

methionine synthase, said sequence sufficient to allow nucleic acid hybridization under high stringency conditions," as recited in Claim 2. The disclosed cDNA meets the limitation "wherein at least 18 contiguous nucleotides of said sequence are complementary to at least 90% of the corresponding nucleotides of the nucleic acid encoding the methionine synthase polypeptide," as recited in Claim 5. The sequence of the disclosed cDNA "is at least 75% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 7. Likewise, the sequence of the disclosed cDNA is therefore "at least 35% identical to the corresponding region of at least 50 contiguous base pairs of the nucleic acid of SEQ ID NO: 1" as recited in Claim 8.

Thus, the claimed invention is disclosed in the prior art.

At pages 3-4 of the remarks filed June 27, 2003, Applicants assert that the claims have been amended to recite a "human" nucleic acid and therefore do not cover nucleic acids that encode methionine synthase from other organisms. Applicants point out that Marra et al. and Banerjee et al. disclose murine and bacteria sequences. However, for the reasons discussed herein above, the claims continue to cover nucleic acids that encode methionine synthase from other organisms.

Conclusion

No claims are allowable.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne-Marie Falk whose telephone number is (571) 272-0728. The examiner can normally be reached Monday through Thursday from 10:00 AM to 8:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached on (571) 272-0735. The central official fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Anne-Marie Falk, Ph.D.

Anne-Marie Falk
ANNE-MARIE FALK, PH.D
PRIMARY EXAMINER